### claim 1.

- 3. A mixture of compound I(a) and compound I(b), according to claim 2.
- 4. A mixture of compound I(c) and compound I(d), according to claim 2.
- 5. A compound mixture of, according to claim 3, wherein said mixture is racemic.
- 6. A compound mixture of, according to claim 4, wherein said mixture is racemic.
- 7. The compound I(a) and the compound I(b), according to claim 3, are each pure enantiomers.
- 8. The compound I(c) and the compound I(d), according to claim 4, are each pure enantiomers.
- A compound according to claim 1 wherein X is H and W is OH; or X and W form a carbonyl group.
- 10. A compound according to claim 9 wherein **X** and **W** form a carbonyl group.
- 11. A compound according to claim 1 wherein ring **A** is a benzene ring, as represented by the formula **I**':

wherein X, R<sup>1</sup>, W, Y, R<sup>3</sup>, and R<sup>4</sup> are as defined in claim 1, with the provisos indicated in claim 1.

12. A compound according to claim 1 wherein ring **A** is a five-membered ring containing a sulfur atom, as represented by the formulae **I**" and **I**":

wherein  $R^1$ , X, W, Y,  $R^3$ , and  $R^4$  are as defined in claim 1, without the provisos indicated in claim 1.

- 13. A compound according to claim 1, wherein  $\mathbf{R}^1$  is H; or one or two substituents independently selected from the group consisting of: hydroxy; halo; lower alkyl; lower alkoxy; lower thioalkyl; haloalkyl; or  $-C(O)\mathbf{R}^2$  wherein  $\mathbf{R}^2$  is lower alkyl, aryloxy or benzyloxy.
- 14. A compound according to claim 13, wherein R<sup>1</sup> is H, halo or C<sub>1-4</sub> alkyl.
- 15. A compound according to claim 14, wherein R<sup>1</sup> is H, fluoro or methyl.
- 16. A compound according to claim 15, wherein R<sup>1</sup> is H or methyl.

- 17. A compound according to claim 1, wherein Y is phenyl optionally mono- or disubstituted with  $R^5$  or  $C(O)R^6$ , wherein  $R^5$  is lower alkyl, lower cycloalkyl, lower alkoxy, halo, hydroxy, nitrile or trifluoromethyl, and  $R^6$  is lower alkyl, lower cycloalkyl, lower alkoxy, hydroxy or trifluoromethyl; said phenyl ring being optionally fused with a saturated or unsaturated 4 to 6-membered ring optionally containing a heteroatom selected from N, O and S; or Y is ethylene-phenyl, said ethylene moiety being optionally mono-substituted with lower alkyl, wherein said phenyl ring is optionally mono- or di-substituted with  $R^5$  or  $C(O)R^6$ , wherein  $R^5$  and  $R^6$  are as defined above; said phenyl ring being optionally fused with a saturated or unsaturated 4- to 6-membered ring optionally containing a heteroatom selected from N, O and S.
- 18. A compound according to claim 17, wherein  $\mathbf{Y}$  is naphthyl, CH=CH-phenyl,  $C(CH_3)$ =CH-phenyl or phenyl, wherein the phenyl ring is optionally mono- or disubstituted at the 3, 4, or 5 position with  $\mathbf{R}^5$ , wherein  $\mathbf{R}^5$  is halo,  $C_{1-4}$  alkyl, hydroxy,  $CF_3$  or NHC(O)-(lower alkyl).
- 19. A compound according to claim 18, wherein **Y** is phenyl optionally substituted with: 3,4-Cl; 3-F,4-Cl; 3-Cl,4-F; 3,4-Br; 3-F,4-CH<sub>3</sub>; 3,4-CH<sub>3</sub>; 3-CF<sub>3</sub>, NHC(O)-

- 20. A compound according to claim 19, wherein **Y** is phenyl optionally substituted with: 3,4-Cl and 3,4-Br.
- 21. A compound according to claim 1, wherein  ${\bf R}^{\bf 3}$  is selected from the group consisting of:

cyclohexyl;  $C_{1-6}$  alkyl;  $C_{1-6}$  thioalkyl;  $(C_{1-6}$  alkyl)phenyl wherein the phenyl ring is optionally substituted with:

lower alkyl,  $CF_3$ , halo, CN, azido, lower alkoxy, (lower alkyl)acyl,  $C_{1-6}$  thioalkyl,

 $C_{1-6}$  alkylsulfonyl, NHC(O)-lower alkyl, aryl, aryloxy, hydroxy, nitro, amino, or Het, said Het optionally mono- or di-substituted with lower alkyl, lower alkoxy, halo, hydroxy, nitrile, trifluoromethyl;

; and 
$$\bigcap_{N \to \infty} \bigcap_{N \to$$

22. A compound according to claim 21, wherein  ${\bf R}^3$  is selected from the group consisting of:

C<sub>1-6</sub> alkyl; C<sub>1-6</sub> thioalkyl;

23. A compound according to claim 22, wherein  $\mathbf{R}^3$  is selected from the group consisting of:

24. A compound according to claim 1 having the following formula:

wherein  $\mathbb{R}^3$  is selected from the group consisting of: lower alkyl, lower cycloalkyl, lower alkylene, aryl or lower aralkyl, all of which optionally mono- or di-substituted with:

lower alkyl, lower cycloalkyl, haloalkyl (e.g.  $CF_3$ ), halo, CN, azido, lower alkoxy, (lower alkyl)acyl,  $C_{1-6}$  thioalkyl,  $C_{1-6}$  alkylsulfonyl, NHC(O)-lower alkyl, NHC(O)-aryl, NHC(O)-O-lower alkyl, NHC(O)O-aryl, aryl, aryloxy, hydroxy, nitro, amino, or Het, said Het optionally mono- or di-substituted with lower alkyl, lower cycloalkyl, lower alkoxy, halo, hydroxy, nitrile, trifluoromethyl,  $C(O)R^6$  wherein

### R<sup>6</sup> is as defined above:

said lower cycloalkyl, aryl, lower aralkyl or Het being optionally fused with a saturated or unsaturated 4 to 6-membered ring optionally containing a heteroatom selected from N, O and S; and

R<sup>5</sup> is lower alkyl, lower cycloalkyl, lower alkoxy, halo, hydroxy, nitrile or trifluoromethyl,

25. A compound selected from the group consisting of: compounds having the following formula:

, wherein  $R^{4A}$ ,  $R^{1}$ ,  $R^{5}$  and  $R^{3}$  are as defined as follows:

	Cpd #	R <sup>4A</sup>	R <sup>1</sup>	R⁵	R <sup>3</sup>	
	1002	Na		3,4-CI		;
	1003	Na		4-Cl	├ <del>-</del>	;
:	1004	Na		4-Cl	O-CH <sub>3</sub>	;
	1005	Na		4-Cl	CH <sub>3</sub>	] ;
	1006	Na	<b></b>	4-Cl	i— Ci	;

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Cpd #	R <sup>4A</sup>	R <sup>1</sup>	R <sup>5</sup>	R <sup>3</sup>	
1007	Na		4-CI	CH <sub>3</sub> ;	
1008	Na		4- <i>i</i> Pr		;
1009	Na		4-Cl	F	;
1010	Na		4-Cl	<u></u>	;
1011	Na		4-Cl		;
1012	Na		4-Cl	CH <sub>3</sub>	;
1013	Na		4-Cl		,
1014	Na		4-Cl	—CF <sub>3</sub>	;
1015	Na		3-Cl		;
1016	Na		4-CF <sub>3</sub>		;
1017	CH₃		4-Cl		
1018	Na		3-CH <sub>3</sub>		
1019	Na	a-F	4-CI		
1020	Na		3,5-CI		

(	Cpd #	R <sup>4A</sup>	R <sup>1</sup>	R <sup>5</sup>	R <sup>3</sup>
	1021	Na		3,4-CI	CH <sub>3</sub> ;
	1022	CH₃		3,4-Cl	;
	1023	Na		3-OCH <sub>3</sub>	
	1024	Na		3,4-CH <sub>3</sub>	; ;
	1025	Na		3,4-Cl	C(CH <sub>3</sub> ) <sub>3</sub>
	1026	Na		3,4-F	
	1027	Na		3,4-Br	CH <sub>3</sub>
	1028	Na		3,4-Cl	
	1029	Na		3-F, 4- Cl	
	1030	Na		3-Cl, 4- F	
	1031	Na		3-CF₃	
	1032	Na		3-CI	⊢ CH₃
	1033	) Na		3,4-C	S CH <sub>3</sub>

Cpd #	R <sup>4A</sup>	R <sup>1</sup>	R <sup>5</sup>	R <sup>3</sup>
1034	Na		3,4-Cl	;
1035	Na		3,4-Cl	⊢ CH₃ ;
1036	Na		3,4-Cl	СН <sub>3</sub> ;
1037	Na	<i>b</i> -CH₃	3,4-Cl	;
1038	Na		3,4-Cl	→ N O ← CH <sub>3</sub> CH <sub>3</sub> CH <sub>3</sub>
1039	Na		4-1	
1040	Na		3,4-Cl	N
1041	Na	d-CH₃		
1042	Na	a-CH₃	3,4-Cl	
1043	Na		3,4-Cl	N_0
1044	Na		3-CI	⊢ CH₃
1045	Na		3-F, 4- CF <sub>3</sub>	
1046	Na		3,4-C	CH <sub>3</sub>

Cpd#	R <sup>4A</sup>	R <sup>1</sup>	R <sup>5</sup>	R <sup>3</sup>
1047	Na		3,4-Cl	CH₃ ;
1048	Na	d-F	3,4-Cl	i i
1049	Na		3,4-Cl	,00
1050	Na		3,4-Cl	, H
1051	Na	a-F	3,4-Cl	
1052	Na		3,4-Cl	i—O N N
1053	Na		3,4-Cl	SO <sub>2</sub> -CH <sub>3</sub>
1054	Na		3,4-Cl	$ \qquad \qquad$
1055	Na		3,4-Cl	CH <sub>3</sub>
1056	Na		3,4-CH <sub>3</sub>	CH <sub>3</sub>
1057	Na		3,4-Cl	
1058	Na		3,4-Cl	
1059	Na		3,4-F	
1060	Na		3,4-Cl	CH <sub>3</sub>

Cpd #	R <sup>4A</sup>	R <sup>1</sup>	R <sup>5</sup>	R <sup>3</sup>
1061	Na		3,4-F	;
1062	Na		3,4-F	;
1063	Na		3,4-Cl	;
1064	Na		3,4-F	CH <sub>3</sub> ;
1065	Na		3,4-Cl	—————————————————————————————————————
1066	Na		3,4-Cl	
1067	Na		3-F, 4- CF <sub>3</sub>	□ CH <sub>3</sub>
1068	Na		3,4-F	
1069	Na	<i>b</i> -Br	3,4-Cl	СН3
1070	Na		3,4-Cl	
1071	Na		3,4-CH	3 N
1072	Na		3,4-Br	
1073	Na		3,4-F	
1074	Na		3,4-Br	
1075	Na		3,4-Bi	r —No

Cpd #	R <sup>4A</sup>	R <sup>1</sup>	R⁵	R³
1076	Na		3,4-Br	;
1077	Na		3,4-Cl	, (o)
1078	Na		3,4-Br	; !—(o)—n(o) ;
1079	Na		3,4-Br	CH <sub>3</sub> CH <sub>3</sub>
1080	Na		3-CN	;
1081	Na		3,4-Br	;
1082	Na		3,4-Cl	
1083	Na		3,4-F	HON S
1084	Na		3,4-Br	
1085	Na		3-CN	
1086	Na		3,4-Br	SO <sub>2</sub> CH <sub>3</sub>
1087	Na			CH <sub>3</sub>
1088	Na		3,4-Br	
				stereochemistry undetermined
1089	Na		3,4-Bı	r A
				stereochemistry

С	pd#	R <sup>4A</sup>	R <sup>1</sup>	R <sup>5</sup>	R <sup>3</sup>	
	-				undetermined	
1	090	Na	b.c.	3,4-Cl	CH₃	,
	1091	Na	a	3,4-Cl	CH₃	;
-	1092	Na		3,4-Br	⊢ CH₃	;
	1093	Na		3-Cl, 4- F	⊢N O	<b>;</b>
	1094	Na		3-Cl, 4- F	CH <sub>3</sub>	;
	1095	Na		3,4-CI	€ CH₃	,
	1096	Na		3,4-Cl	⊨ F	;
	1097	Na		3,4-Br		;
	1098	Na		3,4-Cl		; _
	1099	Na		3,4-B		;
	1100	Na		3,4-C		
	1101	Na		3,4-0		

Cpd #	R <sup>4A</sup>	R <sup>1</sup>	R <sup>5</sup>	R <sup>3</sup>
1102	Na		3,4-Br	CI ;
1103	Na		3,4-Br	;
1104	Na		3,4-Cl	CI ;
1105	Na		3,4-Br	;
1106	Na	<i>b</i> -F	3,4-Cl	CH <sub>3</sub> ;
1107	Na	c-F	3,4-Cl	CH <sub>3</sub>
1108	Na		3,4-Cl	CH <sub>3</sub>
1109	Na		3,4-Br	;
1110	Na		3,4-Br	;
1111	Na		3,4-Cl	F
1112	Na		3,4-Cl	-0-F F
1113	Na		3,4-Br	

Cpd #	R <sup>4A</sup>	R <sup>1</sup>	R⁵	R <sup>3</sup>
1114	Na	c-Cl	3,4-Cl	CH <sub>3</sub>
1115	Na		3-Cl, 4- F	
1116	Na	b-CI	3,4-Cl	СН3
1117	Na		3,4-Cl	NO <sub>2</sub>
1118	Na		3,4-Br	OCF <sub>3</sub>
1119	Na		3,4-Br	CI
1120	Na		3-Cl, 4- F	F
1121	Na		3-Cl, 4- F	Br
1122	Na		3-Cl, 4- F	T F
1123	Na		3,4-Cl	o c
1124	Na		3,4-Cl	
1125	Na		3,4-Cl	

Cpd #	R <sup>4A</sup>	R <sup>1</sup>	R⁵	R <sup>3</sup>
1126	Na		3,4-Cl	CH <sub>3</sub> ;
1127	Na		3,4-Cl	;
1128	Na		3,4-Cl	;
1129	Na	<i>c</i> - OMe	3,4-Cl	CH <sub>3</sub>
1130	Na	<i>b</i> - OMe	3,4-Cl	CH <sub>3</sub> ;
1131	Na		3-Cl, 4- F	-O-CF <sub>3</sub>
1132	Na		3,4-F	CH <sub>3</sub>
1133	Na		3,4-Cl	
1134	Na		3,4-Br	-CI
1135	Na		3,4-Cl	
1136	Na		3,4-Cl	
1137	Na		3,4-C	OMe

Cpd #	R <sup>4A</sup>	R <sup>1</sup>	R <sup>5</sup>	R <sup>3</sup>	
1138	Na		3,4-Cl	, S	;
1139	Na		3,4-CI	CF <sub>3</sub> O	;
1140	Na		3,4-Cl	NO <sub>2</sub> NO <sub>3</sub> NO <sub>4</sub> NO <sub>4</sub> NO <sub>4</sub>	,
1141	Na		3- NHC(O) (CH <sub>2</sub> ) <sub>3</sub> C H <sub>3</sub> , 4-Cl	СН3	;
1142	Na		3,5-Cl	Br	;
1143	Na	b-F	3,4-Br		; and
1144	Na	c-F	3,4-Br		

wherein  $R^{4A}$ ,  $R^{1}$ ,  $R^{5}$ , and  $R^{3}$  are as defined as follows:

Cpd #	R <sup>4A</sup>	R <sup>1</sup>	R⁵	R³
A1001	Na		3,4-Br	I N N N S N N S N N S N N N N N N N N N
				stereochemistry undetermined
A1002	Na		3,4-Br	⊢ N <sub>s</sub> n
	:			stereochemistry undetermined
A1003	Na	mixture b-Me &	3,4-Cl	
		<i>c</i> -Me		stereochemistry undetermined
A1004	Na	<i>b</i> -Me	3,4-Cl	
				stereochemistry undetermined
A1005	Na	c-Me	3,4-Cl	
				stereochemistry undetermined
A1006	Na	mixture b-Me &	3,4-Cl	N=N s
		c-Me		stereochemistry undetermined

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Cpd#	R <sup>4A</sup>	R <sup>1</sup>		R <sup>5</sup>	R <sup>3</sup>
A1007	Na	b-M	е	3,4-Cl	N=N ;
				!	stereochemistry undetermined
A1008	Na	c-M	е	3,4-Cl	N=N ;
					stereochemistry undetermined
A1009	Na	mixt b-M	ì	3,4-Br	N=N ;
		c-N			stereochemistry undetermined
A1010	Na	b-1	Ме	3,4-Br	N=N;
					stereochemistry undetermined
A1011	Na	C-	Ме	3,4-Br	N=N ;
					stereochemistry undetermined
A1012	2 N	a		3,4-Br	; ;
					stereochemistry undetermined
A101	3 N	а		3,4-Br	; ;
					stereochemistry undetermined
A101	4 N	la (	c-Me	3,4-B	
A101	15 1	Na	b-F, c-Me	3,4-B	; and
A10	16		o-Me, c-F	3,4-B	r ————————————————————————————————————

wherein  $R^1$ ,  $R^5$ , and  $R^3$  are as defined as follows:

Cpd #	R¹	R <sup>5</sup>	R <sup>3</sup>	
B1001	b-Me,	3,4-Br		;
	c-Me			
	(mixture)			
B1002	b-Me	3,4-Br		;
B1003	c-Me	3,4-Br		;
B1004	b-Me	3,4-Br	CI	;
B1005	c-Me	3,4-Br	CI	;
B1006	b-Me	3,4-Br	CI	;
B1007	c-Me	3,4-Br	CI	; and

B1008	b-F, c-Me	3,4-Br	} .
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wherein R<sup>5</sup> and R<sup>3</sup> are as defined as follows:

Cpd #	R⁵	R <sup>3</sup>	
C1001	3,4-Cl	CH <sub>3</sub>	;
C1002	3,4-Br		; and
C1003	3,4-Br	HOCH <sub>3</sub> CH <sub>3</sub>	•

29. A compound selected from the group consisting of: compounds having the following formula:

$$H_3C$$
 $HO_0$ 
 $HN_{R^3}$ 

wherein R<sup>5</sup> and R<sup>3</sup> are defined as follows:

Cpd #	R⁵	R <sup>3</sup>	
D1001	3,4-Cl	CH <sub>3</sub>	;
D1002	3,4-Br		;
D1003	3,4-Br	HOCH <sub>3</sub> CH <sub>3</sub>	; and
D1004	3,4-Br	H-CH <sub>3</sub>	

wherein R<sup>5</sup> and R<sup>3</sup> are as defined as follows:

Cpd #	R⁵	R <sup>3</sup>	
2002	4-Cl	0-СН <sub>3</sub> ├── О-СН <sub>3</sub>	
2003	4-CI	CH <sub>3</sub>	;
2004	4-CI	├— <b>○</b> F	,
2005	3-Cl		,

_	44 10 00	R <sup>5</sup>	R <sup>3</sup>
Š	pd #	4-Cl	
2	2006		⊢—CH₃
- 2	2007	4-Cl	; ————————————————————————————————————
	2008	4-CF <sub>3</sub>	;
	2009	4-Cl	;
	2010	4-Cl	;
	2011	4-Cl	ÇF₃ ;
	2012	4-CI	
	2013	3,4-Cl	
	2014	3-CH <sub>3</sub>	
	2015		CF <sub>3</sub>
	2016		EH₃
	2017	7 4-1	
	2018	3,4-CI	H <sub>3</sub> C CH <sub>3</sub>
	201	9 3,4-Cl	NH <sub>2</sub>

Cpd #	<b>R</b> ⁵	R <sup>3</sup>	
2020	4-OH,	L 0 -0	;
	5-CI		
2021	3,4-Cl	<del>—</del> Он	5
2022	3,4-Cl		; and
2023	3,4-Br		

wherein R<sup>1</sup>, Y, and R<sup>3</sup> are as defined as follows:

Cpd #	R <sup>1</sup>	Y	R³	
3001		C1 C1		
3002		CI	H	;
3003		Ca	$\langle \rangle$	;
3004		CI		;

Cpd #	R <sup>1</sup>	Y	R <sup>3</sup>	
3006		CI	- C 1	;
3007		CI	ČH <sub>3</sub>	,
3008		CI	F N=N=N	,
3009		CI	— СН <sub>3</sub>	;
3100		CI	C H <sub>3</sub>	;
3011		CI	~0	,
3012		CI	СН.	;
3013	c-Me	Br	i—√S	
3014		CI		;
3015		CI		;
3016	b-F	Br		; and
3017	c-F	B		•

wherein Y and R<sup>3</sup> are as defined as follows:

Cpd #	Y	R <sup>3</sup>
4001		
4002		
4003		
4004		├────────────────────────────────────
4005		├────────────────────────────────────
4006	Br	CH <sub>3</sub>
4007	Br	;—⟨O CH₃
4008	CH <sub>3</sub>	CH <sub>3</sub>

Cpd #	Y	R <sup>3</sup>	
4009	CH <sub>3</sub>	CH <sub>3</sub>	;
4010	CI	CH <sub>3</sub>	,
4011	Me	EH³	; and
4012	Br	CH <sub>3</sub>	

## 33. A compound having the following formula:

wherein R<sup>5</sup> and R<sup>3</sup> are as defined as follows:

Cpd #	R⁵	R <sup>3</sup>
5001	3,4-Cl	

## 34. A compound having the following formula:

wherein R<sup>5</sup> and R<sup>3</sup> are as defined as follows:

Cpd #	R <sup>5</sup>	R <sup>3</sup>
6001	3,4-Cl	

## 35. A compound having the following formula:

wherein X,  $R^{4A}$ ,  $R^5$  and  $R^3$  are as defined as follows:

Cpd #	R <sup>4A</sup>	R <sup>5</sup>	R <sup>3</sup>
7001	OCH <sub>3</sub>	3,4-CI	

## 36. A compound having the following formula:

wherein R<sup>5</sup> and R<sup>3</sup> are as defined as follows:

Cpd #	R⁵	R <sup>3</sup>
1		ľ

8001	3,4-Cl	
------	--------	--

37. A compound having the following formula:

wherein W,  $R^5$  and  $R^3$  are as defined as follows:

Cpd #	W	R⁵	R <sup>3</sup>
9001	QH	3,4-Cl	

38. A compound having the following formula:

wherein Y and R<sup>3</sup> are as defined as follows:

Cpd #	Y	R <sup>3</sup>
10,001	Br	

39. A pharmaceutical composition comprising an anti-papillomavirus virally

effective amount of a compound of formula (I), according to claim 1, or a therapeutically acceptable salt or ester thereof, in admixture with a pharmaceutically acceptable carrier medium or auxiliary agent.

- 40. A method for treating a papillomavirus viral infection in a mammal by administering to the mammal an anti-papilloma virus virally effective amount of the compound of formula (I), according to claim 1 without the provisos indicated in claim 1, or a therapeutically acceptable salt or ester thereof, or a pharmaceutical composition comprising an anti-papillomavirus virally effective amount of a compound of formula (I) according to claim 1 without the provisos indicated in claim 1, or a therapeutically acceptable salt or ester thereof, in admixture with a pharmaceutically acceptable carrier medium or auxiliary agent.
- 41. A method for inhibiting the replication of papillomavirus by exposing the virus to an amount of the compounds of formula (I), according to claim 1 without the provisos indicated in claim 1, inhibiting the papilloma virus E1-E2-DNA complex, or a therapeutically acceptable salt or ester thereof, or a composition comprising an anti-papillomavirus virally effective amount of a compound of formula (I) according to claim 1 without the provisos indicated in claim 1, or a therapeutically acceptable salt or ester thereof, in admixture with a pharmaceutically acceptable carrier medium or auxiliary agent.
- 42. A method of preventing perinatal transmission of HPV from mother to baby, by administering a compound of formula (I), according to claim 1, without the provisos indicated in claim 1, to the mother prior to giving birth.
- 43. An intermediate compound of formula vi:

wherein  $\mathbf{R}^3$  and  $\mathbf{Y}$  are as deined in claim 1, with the provisos indicated in claim 1.

44. An intermediate compound of formula xx:

wherein  $R^3$ ,  $R^4$ , and Y are as defined in claim 1, with the provisos indicated in claim 1.

45. An intermediate compound of formula xxvi:

wherein  ${\bf R^1}$ ,  ${\bf Y}$ , and  ${\bf R^3}$  are as defined in claim 1, without the provisos indicated in claim 1.

46. An intermediate compound of formula xxxii:

wherein  ${\bf R^1}$ ,  ${\bf R^3}$  and  ${\bf Y}$  are as defined in claim 1, without the provisos indicated in claim 1.

47. A process for producing a compound of formula I',

wherein X,  $R^1$ , W, Y,  $R^3$ , and  $R^4$  are as defined in claim 1, with the provisos indicated in claim 1,

### comprising:

a) hydrolyzing, in a mixture of aqueous base and a co-solvent, either intermediate compound vi or intermediate compound xx

to produce compounds of formula I', wherein  ${\bf R^3},\,{\bf R^4},\,{\rm and}\,\,{\bf Y}$  are as defined in claim 1.

- 48. A process for producing compounds of formula l', according to claim 47, comprising:
- b) acidifying said mixture with aqueous acid so as to produce compounds of formula I'.
- 49. A process, according to claim 48, for producing compounds of formula I', comprising:
- c) treating the product from b) with diazomethane.
- 50. A process, according to claim 47, for producing compounds of formula I', comprising:
- a) reducing, in a mixture of a hydride source and an aprotic solvent, intermediate vi:

to produce a mixture of monohydroxy intermediates xiv and xv:

xiv and xv

wherein Y and R<sup>3</sup> are as defined in claim 1.

- 51. A process for producing compounds of formula l', according to claim 50, comprising:
- a) hydrolyzing, in a mixture of aqueous base and a co-solvent, intermediates xiv and xv, to produce compounds of formula I'.
- 52. A process for producing compounds of formula I",

wherein X and W together form a carbonyl group,  $R^4$  is a carboxylic acid or an ester, and  $R^1$ , Y, and  $R^3$  are as defined in claim 1, without the provisos indicated in claim 1,

### comprising:

a) hydrolyzing, in a mixture of aqueous base and a co-solvent, intermediate compound xxvi,

so as to produce compounds of formula I", wherein  $R^1$ , Y, and  $R^3$  are as defined in claim 1.

53. A process for producing compounds of formula I", comprising:

wherein  $\bf X$  and  $\bf W$  together form a carbonyl group,  $\bf R^4$  is a carboxylic acid or an ester, and  $\bf R^1$ ,  $\bf Y$ , and  $\bf R^3$  are as defined in claim 1, without the provisos indicated in claim 1,

### comprising:

a) hydrolyzing, in a mixture of aqueous base and a co-solvent, intermediate compound xxxii

so as to produce compounds of formula I"", wherein  $\mathsf{R}^1$ , Y, and  $\mathsf{R}^3$  are as defined in claim 1.